

CLAIMS:

1. An electrical switch unit (1, 60, 61, 70) for controlling the supply of electrical energy to an appliance (7, 65) that also has its own electrical control switch (38) for controlling operation of the appliance, the switch unit having a live (20),
5 a neutral or earth terminal (21), or both, for operative connection to an electrical power supply; at least a load output terminal (22) for operative connection to an electrical appliance; an electrically or electronically operated load switch (23, 51) connected between the live input and load output
10 terminals for opening and closing a load circuit between said live input and said load output terminals, and an electronic circuit embodying timer means for controlling the load switch, the switch unit being characterised in that the load switch is a normally open switch operatively closed by the electronic circuit, and in that a bypass detector circuit (25) is connected in parallel across the
15 load switch, the timer means being operative to become activated consequent on the initiation of current flow through the detector circuit to effect closure of said load switch after a time delay (that is independent of real-time), and to maintain the load switch in a closed condition either for a predetermined optionally adjustable time period or until current flow through the detector
20 circuit ceases after which the load switch is operatively returned to its normally open condition.
2. An electrical switch unit as claimed in claim 1 in which the predetermined optionally adjustable time delay (35, 52, 63) is from about one to about six
25 hours.
3. An electrical switch unit as claimed in claim 2 in which the predetermined optionally adjustable time delay is from about two to about five hours.
- 30 4. An electrical switch unit as claimed in any one of claims 1 to 3 in which the timer means is adapted (40, 41, 42, 43) to provide a manually operable selection between two, three, or four different time delays.

5. An electrical switch unit as claimed in any one of the preceding claims in which the said predetermined optionally adjustable time period (36, 64) for which the load switch is maintained in a closed condition is from about one to about four hours.
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6. An electrical switch unit as claimed in any one of the preceding claims in which a manually operable override switch (44) is associated with the switch unit to enable the said predetermined time delay to be selectively by-passed manually.
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7. An electrical switch unit as claimed in any one of the preceding claims in which the switch unit has associated therewith a current sensor (30) for sensing current in one or more conductors (9) not associated directly with the output load terminal such that activation of the timer means to time out said optionally adjustable time delay is, after an optional initial shorter time delay (28), replaced by immediate closure of the load switch in circumstances in which the current sensor fails to sense a current above a predetermined base level in said one or more conductors not associated directly with the output load terminal during said initial shorter time delay.
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8. An electrical switch unit as claimed in claim 7 in which for the current sensor is either attached to the switch unit by way of a flexible lead (31) that enables the current sensor to be associated with said one or more conductors (9) a short distance from the switch unit or it is embodied in the switch unit (70) that has a passageway (72) for receiving one or more conductors (73) passing the switch unit in cooperating relationship relative to the current sensor (71).
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9. An electrical switch unit as claimed in either one of claims 7 or 8 in which the switch unit is adapted to be installed in an electrical distribution box (2) in series with an electrical switch (6, 76) connected to supply electricity to an electrical water heater (37) having its own thermostatically operated electrical control switch (38) with the current sensor being associated with one or more electrical conductors connected to one or more other power circuits in the electrical installation.
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10. An electrical switch unit as claimed in claim 9 in which the switch unit has a housing that is configured for support in juxtaposed aligned relationship relative to a series of electrical control switches that generally includes an earth leakage unit (4, 74), one or more water heater switches or isolators (6, 76), and a series of trip switches (5, 75).
11. An electrical distribution box including an electrical switch unit as claimed in either one of claims 9 or 10.
12. An electrical switch unit as claimed in any one of claims 1 to 8 in which the switch unit is configured as a separate plug-in unit (61) to an electrical supply outlet socket to interface between the socket and a plug for supplying electrical energy to an appliance in which case it has conductive pins (62) for cooperation with the socket on one face and a socket for receiving a plug associated with an appliance on another face.
13. An electrical switch unit as claimed in any one of claims 1 to 8 in which the switch unit is built into an electrical power supply outlet socket (60).
14. An electrical supply system in which a multitude of consumers are supplied from an electrical supply company or electrical supply grid and wherein at least some of the consumers have premises having an electrical installation in which there is embodied at least one switch unit as claimed in any one of claims 1 to 10.

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